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AUTHOR Verduin-Muller, Henriette
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ABSTRACT

In a shrinking world where there is limited space, materials, and capital for men's basic needs, it is important to make well considered use of the physical and human geographical setting. To obtain from the geographical setting the information needed to attain adequate decision making, empirical research is needed, and through formal, non-formal, and informal education, people need to be informed about the research output. In supplying the information, geographers must distinguish between two types of informational geography: the scientific orientation--geographical research is published for its own sake; and the man/society orientation--research output is used as a source of information for problem solving. The responsibility for geographical informing must be that of educated academic geographers, who must prepare themselves by taking courses in the communication sciences and developing a theory and a method to design geographical information. At the University of Utrecht (Netherlands) such a program is underway. Geography students there have developed a model for planning and designing information for man/society oriented geography. The model is presented. (RM)

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ABOUT THE IDENTITY OF INFORMATIONAL GEOGRAPHY FOR FORMAL, NON-FORMAL AND INFORMAL EDUCATIONAL PURPOSES

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

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Prof.Dr.Henriëtte Verduin-Muller

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ABOUT THE IDENTITY OF INFORMATIONAL GEOGRAPHY FOR FORMAL, NON-FORMAL AND INFORMAL EDUCATIONAL PURPOSES

With the rapid transformation of the industrial society into the information society, terms seem to get another or even a double meaning. And not to run the risk of misinterpretation, I first want to ask your attention for the definition of the crucial terms used in the title of this speech.

To begin, the most confusing one, namely information, will be determined. Information will be used in the following, generally accepted meaning. *Information* then, is defined as any input that is intended for the purpose of reduc ing uncertainty, or of confirming or enlarging prior knowledge.[1]
In other words, information forms the raw material for the generating process to which all persons are in principle entitled. With the generating process is meant the processing of information as demonstrated in our thinking, decision making and actions.
So any input can get an informational function. It does not make any difference if the input is administered by high or low technology, thus by highly sophisticated computers, book-, tv.-output, or discussion.
This speech in its spoken form (out/input) (or in written form as a paper) may function, and I really hope it will, as information for the listeners' (readers') generating process, today, tomorrow, or the day after tomorrow, thus in the near future or in a more removed one. The generating process, namely usually takes an erratic development. Therefore it is a happy circumstance that information as raw material can be stored.
The most complex and private storehouse is our memory. Besides we have other private storing places such as notebooks, audio-cassette recorders and micro-computers. Apart from private storing places, there are public ones we can use, such as archives, public libraries, video-tape centers and data-banks.
A very remarkable aspect of information is that after using it in function of the generating process, this raw material can be kept in its original form, whereas mostly raw material is not recognizable after use. So, generating information is in principle a reversible process, which is of great importance.

The second term to bring up is *education*. Education is used here in the terminology of UNESCO and is roughly defined as introducing people to the knowledge and understanding necessary to hold one's own in society and to get along in society.[2]

Thus, education is of an emancipating nature and therefore has to have intellectual substance. Formal education is school-education as must be given by law, non-formal education includes all forms of adult education, in fact lifelong education or permanent education, and informal education comprehends the many ways in which people are informed and guided on different topics and events. So by education we do not mean the actual 'teaching' process as it is determined by all physical and social aspects of a communication situation. After this we will now turn to the title as a whole.

What is the quintessence of informational geography for formal, non-formal and informal educational purposes?
Our physical and human geographical settings are continuing and potential sources of information and with that deliver food for the generating process. And indeed from the very beginning man has reacted meaningful to the possibilities and limitations of his spatial situation. To survive, a place of optimal security was selected for building living-quarters, and fishing and hunting grounds were carefully chosen. We pose that distinguishing relevant geographical information, making adequate decisions and operating in accordance is basic to the human being. We mean that by doing so, he has proved to react meaningful upon and in relation to his living space. For example, land used for several crops was abandoned and with that given back to nature to restore it in one or another way.
In Third World countries we can still observe this keenness and precise knowledge of the possibilities and limitations of space. Without having any agricultural research output at disposal, the autochthonous people know exactly how the soil can be put to the best use. And many a multinational has wished to have listened more carefully to the autochthons before a capital intensive project was started. We then think e.g. of the badly failed peanut project the U.K. set up in East Africa in the fifties, notwithstanding the amazement of the native people. The financial loss was an ample 60 million pounds.
The history of mankind is full of examples of reaction to spatial setting in a positive sense. Through the ages the peoples of the Sahel region had built up a very delicate, but functional balance in the occupation of the soil in that semi-arid region. A balance that has been fundamentaly disturbed, leading to today's Sahel problems, by the Europeans opening up West Africa from the coastline in their search for raw materials.

In trying to make the best use of space and in doing so avoiding blunders as mentioned, the science of geography could be of great help. More and more has society begun to appreciate geography as a science which can contribute to the understanding of all kinds of spatial phenomena and processes. Moreover, in the 'shrinking world' there will be limited space, limited materials and limited capital for men's basic needs as to living, working, communicating and recreating. So it is important to make a well considered use of the physical and human geographical setting. But how to filch from the geographical settings the information needed to attain adequate decision making and consequent behaviour. The answer is empirical research.

Indeed, the science of geography is in a phase of healthy development.

But research is only the beginning, the research output has to be translated into actions, that is into management, thus preventing that research reports disappear into the deep drawers of a desk or serve as ornaments on the shelves of archives.

So people on all levels are to be interested in and therefore informed about the research output. We think indeed, this should take place in all three types of education mentioned, formal, non-formal and informal education.

In supplying the information we have to distinguish between two main types of informational geography: a *scientific* and a *man/society* orientated one.

In the *scientific* orientation the output of geographical research is published for its own sake. This geographical information then, as to its content, is a *translation* of the research output, to make it accessible as such.

This scientific enlightenment, as a new way of informing, is now becoming more popular all over the world. We only need to refer to the extensive range of magazines, among which the *Scientific American* is one of the best.

The *man/society* orientated way of informing is quite different and much more difficult to realise. In this case, the research output is used as a *source* in function of clearifying certain themes, problems and processes and to come to reflections on future developments. The man/society orientated enlightenment of informing goes, so to say, much further than the scientific one. It nearly goes without saying that informing while using the research output as a source is a very special task. However, man/society orientated enlightenment is making progress. This might be the conclusion from a short survey wherein leading geography journals as the American *Journal of Geography*, the English one named *Geography* and the German *Geographische Rundschau* are compared for the period 1963-1983.

We have mentioned the two extremes, but in reality there will be much in between, this is especially the case for the man/society orientated way, as we will see.
In the coming information age with its focus on information, and the opportunity as well as the need for man to be better informed, much work will have to be done in the informational geographical sector. Therefore we now turn to the question: 'who has to do the job?'. In other words, who can and who will take the responsibility for geographical informing.

I take the point of view that scientific and man/society orientated enlightenment have to be done essential by academic educated geographers.

As fas as the *scientific orientated* way is concerned, I think that the academic geographer has to complete his studies with theory of and practice in the communication sciences. Now that communication sciences in the Western World have gained so much in the last decennia, time may have come in which this science can serve in function of certain academic disciplines, in this case geography (physical and human). In Utrecht we do have excellent experiences in combining academic geography and communication sciences. This is a good moment to acknowledge my gratitude to the colleagues of the Faculty of Communication and Journalism at the University of Florida, Gainesville. There exists an affiliation between the universities of Utrecht and of Florida, so that geography students from Utrecht can complete their studies in Gainesville, and they do so with succes in the communication sciences, taking at the same time media courses which are to their satisfaction.

As far as the *man/society* orientated way is concerned, things are much more complicated, because, as we saw, research output is used as a source. The consequence is that a theory and a method to design geographical information has to be developed.
The academic geography student who plans to work in the field of man/society orientated enlightenment has to complete his studies with this theory and method and must practise his abilities at the same time.

In May 1973 the Geography Faculty of the University of Utrecht decided to start a doctoral research study in Geography for Education, in which the provision with geographical information took a central place. By this, geography was taken to be an applied science. Included were the three levels of education, namely formal education, non-formal (adult) education, as well as the broad field of informal education, e.g. by citizens' participation in spatial planning procedures.

The decision to start this doctoral research study was taken in the light of the changes which society and especially Dutch society was likely to face in the years to come. Among these were demographic changes (the Netherlands having entered into the post-transitional phase of demographic development), which meant less pupils, and thus more potential clients for non-formal and informal education.

The extension of education will also be determined by such factors as more leisure time and the internal and external democratization of society on the one hand and the extension, improvement and demassfication of the communication media on the other. In consequence, education itself will change into making available highly qualitative module-like educational information units. The teacher will see him or herself in a different role: as a valuable study companion for the student.

The new study 'Geography for Education' had an appropriate birthplace, since so much empirical research in geography has been done and is to be done in the Geographical Institute of Utrecht.

A small staff set to work in the fall of 1973.

Literature study made clear that no theory nor method for designing geographical information did exist. Studying curriculum theory, instructional design, media design, the didactics of geography and the descriptions of the realization of geography projects such as the American High School Project was interesting, but did not carry us much further. (The big project in the U.K., in Western Germany and in my own country, the Netherlands, were in a phase of discussion and were executed only in the second half of the seventies.)

The literature we studied was orientated to instruction, that is why I think, special attention for the information to be given was neglected.

Most remarkable was a notation made bij Nicholas Helburn in his Final Report on the High School Geography Project, on page 34. I quote, 'Arthur and Judith Gettis worked nearly full time from November, 1964 to June, 1965, on the first urban unit. *They had no model to work from*'.[3]

Helburn's remark within the context of his chapter on '*The development Process*' of the HSGP gave ample food for thought. A designing model for geographical information had to be constructed.

The best way to proceed seemed to be on a pragmatic basis, to design geographical information, to watch the process carefully, to notice sharply what was happening, to protocol all activities, to discuss the procedure and to visualize the development in a diagram.

Fortunately we could begin with two commissions from the field: one on

European Population, a combined commission from the Council of Europe and the International Council for Educational Media (ICEM), and a second on *Landconsolidation in the River District* (the land between the big rivers the Rhine, the Waal and the Meuse), a commission from the department of Land Division of the Ministry of Agriculture. So we had a kind of frame of reference for the programme of requirements for the geographical information to plan. Before I will make you a partner in the design adventures, I have to focus on the objective of Geography for Education, because logically, the definition determines the essentials of the information output.

The objective of geography for education then, is that man will see himself in his relation to his immediate and distant environment, This relationship changes continuously. In order to be able to determine his social and existential position, man must be able to orient himself in his environment and to acquire insight into the changes which take place in it.
On the one hand, man is part of an ordered environment; on the other hand, he causes changes in this environment by his own activities. Physical processes also cause changes independent of man. Thus a continuous reshaping occurs, either gradually or precipitately.
It is the task of geography for education to make man thoroughly familiar with the existing physical-spatial and social-spatial structures as well as the genesis of these structures and with the processes especially those concerning spatial behavior and behavior in space which influence them. As a consequence of the continuing spatial reordering man, during his lifetime, is constantly confronted with new relationships. The underlying aim is therefore that man will be able to and will dare to venture independently to acquire insight into spatial social relationships new to him.

The nature of the given definition is, as far as could be concluded from a study of objectives, rather universal, and fully in the man/society orientated context. So we set out to develop a model for designing geographical information in which research output from the discipline would be taken as a source, whereas the information output itself would serve the man/society orientation.

How to master the blackbox situation?
Posing questions and problems in a foot-loose way had to be avoided. In consequence it was necessary to study the field from a holistic point of view, thus the field had to be approached as a system. In order to map out the field to be explored an operational research was set up. The research cycle used in the social sciences and empirical by nature, in due order: observation

(hypothesis) ⟶ induction ⟶ deduction ⟶ testing ⟶ evaluation ⟷ observation seemed to be a good entry into the blackbox, and indeed it turned out to be. (The hypothesis as to planning and designing geographic information were based on former research.)
The research was executed by the staff together with the doctoral students of Geography for Education as part of their study. To begin with there were the two commissioned projects from the field (on European Population and on Land-consolidation in the River District), soon followed by a purely staff runned project on geographical information concerning the *Green Heart Metropolis* (Randstad).

By October 1983, after an ample ten years, we have realized 50 projects all-together, spread over three generations.
Departing from the social science cycle, step by step a model was developed to design geographical information for man/society orientation on different educational levels, namely formal, non-formal and informal education.
We paid much attention to the diversity of the geographical themes and the regional settings. This themes and settings varied from the European population and land consolidation to the functional shift in Berlin caused by the partition of the city and the Green Revolution.
As to aspects of the content, a close cooperation was developed with the different specialists within the Geographical Institute.
In 1976 five theses on designing geographical information were published (Moscow, 23rd IGU-congress). These theses then led to a model which was presented on different occasions in 1978 (London, April 1978, IGU-symposion on Geographical Education; Ibadan, Nigeria, July 1978, Regional Conference IGU). This model is still of current interest, since it has proved to be very useful. However, far more insight has meanwhile been gained into the mutual coherence of the elements within the model, as well as into the connections and junctions with outer elements. Rightly so the model is valued as a system.
The model is given in figure 1.

A model for pla ming and designing information for man/society orientated geography.

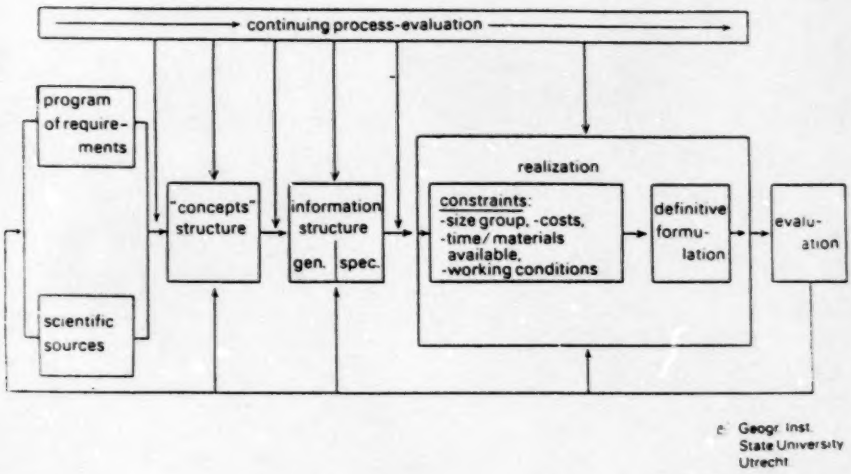

fig. 1

As sources were used: in the first place research output, but also literature, observation on location, interviews, archives, statistics, screened media etc.

From the very beginning there was a continuous reflection on the research undertaken and written up in reports, theses, process descriptions, process evaluations etc.[4] So we acquired much fruitful information, not only concerning the actual model as a whole or per element, but at the same time also about crucial points in the decision making process involved when working with the model. Together with the very diverse remarks, marginal notes and queries from colleagues abroad, which gave us a lot of unexpected insight into the complexity of the field under exploration, much information was collected.
A publication about those experiences is coming forth. A first specimen was already presented in paper form at the 24th IGU-congress in Tokyo in 1980 (section Geographical Education in Tsubuka, Japan).
Of the two types of informational geography, the scientific and the man/society orientated one, we found the latter far more complicated than the former one. And especially in the coming information age there will be, as explained, great need for clear, objective geographical information in the man/society orientated enlightenment. Indeed, there is a good deal of work to be done by geographers.
In Utrecht we will continue refining the system, we hope to keep you informed.

Thank you for your attention.

NOTES

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2. E.Faure, Learning to be, UNESCO, 1972.

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4. H.S.Verduin-Muller, Theses on designing and dissemination of geographical knowledge.Paper ten behoeve van het 23e Congres van de International Geographical Union, Moskou, juli/augustus,1976.

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